Australian Bureau of Statistics

6202.0 - Labour Force, Australia, Mar 2018 Quality Declaration

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 19/04/2018

ANNUAL SEASONAL RE-ANALYSIS

INTRODUCTION

The annual seasonal re-analysis of the Labour Force series was conducted on estimates up to February 2018. The seasonally adjusted and trend estimates in this issue reflect adjustments made as a result of this re-analysis.

While combined seasonal factors for the complete time series are estimated each month, the parameters and prior corrections are reviewed annually at a more detailed level than is possible in the monthly processing cycle. The annual seasonal re-analysis takes into account each additional year's original data and assesses the appropriateness of seasonal adjustment parameters and prior corrections. In particular, in this annual seasonal re-analysis the ABS has reviewed the parameters for the highly seasonal periods of December and January, and as such, minor revisions are evident over these months.

Also implemented as part of this year's annual seasonal re-analysis are improvements to trend estimation, including minor changes to the trend filter lengths used in Labour Force series. Further information on this can be found in the below section "Improvements to trend estimation".

WHAT IS SEASONAL ADJUSTMENT?

Labour Force data are collected monthly (or quarterly for some topics) using the same methods, which results in original (that is, unadjusted) monthly or quarterly time series. Seasonal adjustment is applied to some of the original series to remove influences that are:

- systematic and calendar related, for example school leavers joining the labour force every February; and/or
- systematic and related to holidays which move around between months but which still occur every year, for example Easter.

Systematic and calendar related influences which have the same timing, same direction and similar magnitude every year, are removed to create the seasonally adjusted series. The presence and size of influences due to moving holidays, the variable timing of the commencement of interviews in January and the timing of supplementary surveys are estimated using a regression-ARIMA framework and also removed. The regression-ARIMA framework enables these influences to be accurately estimated. Without accurate estimation of these effects, the seasonal pattern may be obscured, and the seasonal factors may be less accurate.

The seasonally adjusted series irregular component is removed to create the trend series. Seasonally adjusted and trend series are revised each month to take account of the latest original estimates.

The ABS aims to produce high quality seasonally adjusted estimates that are without systematic related variation.

Seasonally adjusted aggregate hours worked estimates include more extensive corrections for the influence of public holiday and school holiday effects. Each moving holiday is estimated and removed in the aggregate state/territory estimates. State/territory level influences are used to estimate the school and public holiday effects in the Australia and full-time/part-time by sex estimates.

During each annual seasonal re-analysis, the framework for estimating moving holidays and variable timing of the commencement of interviews in January is assessed for appropriateness. This ensures that the impact of these influences are being appropriately estimated from year to year, that assumptions used in the regression-ARIMA framework continue to be valid, and to implement improvements in estimation methodology.

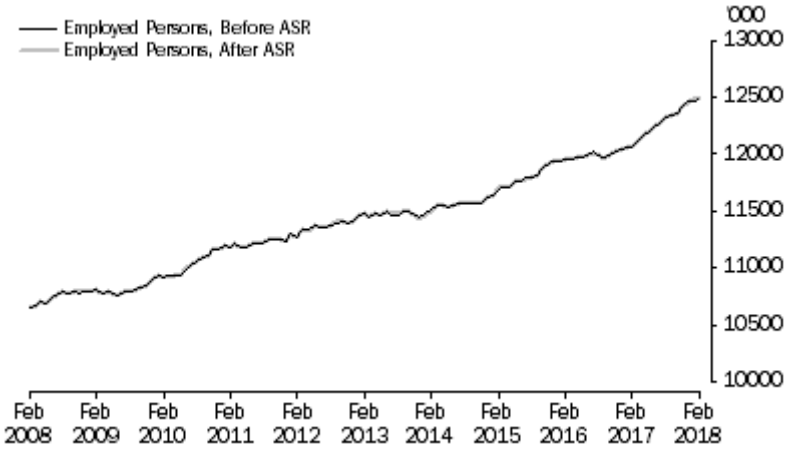
IMPACT ON THE LABOUR FORCE DATA

To account for the changes made to the supplementary survey program from 2014, the seasonal adjustment parameters and prior corrections have been monitored and revised regularly on an ongoing basis. As a result, revisions to seasonally adjusted and trend estimates arising from the 2018 annual seasonal re-analysis have been minimal.

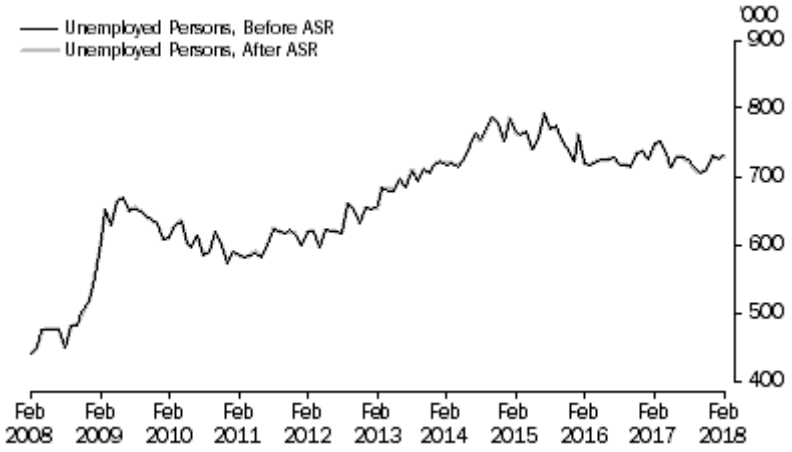
For the period February 1978 to February 2018, the seasonally adjusted employed persons level series changed by an average absolute monthly value of 1000 persons (0.01%), with the largest revision of 21,000 persons (0.2%) occurring in January 2018. This revision is attributable to the adjustment to account for the highly seasonal periods of December and January. Revisions include the impact of both the normal seasonal adjustment process and the results of the annual seasonal re-analysis. The employed persons trend series changed by an average absolute monthly value of 1,800 persons (0.01%).

The unemployed persons seasonally adjusted series for the period February 1978 to February 2018 changed by an average absolute monthly value of 700 persons (0.1%), with the largest revision of 4,600 persons (0.8%) occurring in March 1988. The unemployed persons trend series also changed by an average absolute monthly value of 700 persons (0.1%).

Graph 1, Employed persons, Seasonally Adjusted



Graph 2, Unemployed persons, Seasonally Adjusted



ONGOING REVIEW OF METHODOLOGY

As part of a process of continuous improvement, the ABS will continue to explore options for further improving the quality of Labour Force time series. Such investigations may identify further optimisations.

The ABS will continue to provide updates on any developments in this space within *Labour Force, Australia* (cat. no. 6202.0), ahead of any changes being implemented as part of the 2019 annual seasonal re-analysis.

IMPROVEMENTS TO TREND ESTIMATION

As part of the 2018 Annual Seasonal Re-analysis, the ABS has also implemented some minor improvements to trend estimation for Labour Force time series. These improvements will reduce the extent of revisions in trend series over time, providing particular benefits for series with smaller populations (eg. states and territories with smaller populations).

The improvements to monthly person estimates have been implemented in this issue, with improvements to hours worked estimates to be implemented in the April 2018 issue, and improvements to the quarterly series in the May 2018 issue.

In addition, as part of the improvements to trend estimation, the ABS has also reviewed whether using a filter length other than the standard 13-term Henderson filter would be appropriate for some series. The filter length choice affects the series behaviour extracted and measured by the trend. A 23-term filter length has been deemed optimal in producing high quality trend data and implemented for the following series:

- Unemployed persons, Australian Capital Territory
- Unemployed persons, Northern Territory
- Unemployed persons, Tasmania
- Unemployed persons, Ages 15-19
- Unemployed persons, Full-Time, Ages 15-19
- Unemployed persons, Full-Time, Ages 15-24
- Unemployed persons, Part-Time, Ages 15-24
- Unemployed females, Full-Time, Married
- Unemployed females, Part-Time, Married

For further information on the improved approach, please see the article "Improvements to Trend

Estimation" in the February 2018 issue of *Labour Force, Australia* (cat. no. 6202.0), which has also been republished in this issue.

The methods used to calculate seasonally adjusted estimates will not be changed.

This page last updated 14 August 2019